

WRITTEN REPLY

Attn: Commissioner of Patent Office

1. Indication of International Application: PCT/JP02/09327

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5. Contents of Written Answer:

(1) The examiner has found that the explanation of FIG. 4 does not match the descriptions according to the second embodiment of the specifications.

We admit that there is an error as found by the examiner. Therefore, we presented a written amendment and corrected FIG. 4 in accordance with the "descriptions according to the second embodiment of the specifications".

(2) Opinion of the Examiner on lacking in inventive step

The applicant presented a written amendment to correct all independent claims 1, 4, 5, and 8 so that the differences from the respective documents can be clarified.

(2-1) Relating to claims 1 ~ 3, and 5 ~ 7

The examiner found that "the document 1 describes the system in which each wireless device performs communication with frequency hopping according to the timing signal received from a GPS satellite", and that "the document 2 describes the communication performed by the transmitter transmitting a local oscillation signal with a transmission signal, the receiver regenerating a local oscillation signal according to the received local oscillation signal thereby performing communication".

The applicant agrees to the findings of the examiner about the documents 1 and 2. However, the applicant cannot accept the finding of the examiner that "it is easy to adopt the transmitter of the document 2 instead of the timing signal from the GPS satellite of the document 1 so that a specific transmitter can transmit a reference signal".

The present invention (claims 1 ~ 3 and 5 ~ 7) is amended to clarify the following points that a radio modulation signal is generated and transmitted by multiplying an intermediate frequency band modulation

signal from the intermediate frequency band modem for modulating a transmission signal and demodulating a received signal by the frequency hopping system, and that a downconverted intermediate frequency band demodulation signal can be generated by multiplying a received radio modulation signal by a local oscillation signal, and then the intermediate frequency band modem can perform demodulation.

The above-mentioned points are not described in any documents.

With the above-mentioned configuration of the present invention, as described in the specifications, a specific effect of "being able to use the conventional frequency hopping system because it is not necessary for the IF band modem circuit 31 in the FH system to be highly responsive or to excel in synchronous supplement since the frequency offset and the phase noise in a radio signal are sufficiently removed by the circuit before input to the IF band modem circuit 31 in the FH system" can be generated.

Thus, we consider that the present invention has an apparent inventive step.

The timing signal of the document 1 is a synchronous signal of the communication by frequency hopping. In the present invention, it corresponds to the synchronous signal in the intermediate frequency band modem for modulating/demodulating a signal in the frequency hopping system.

According to the present invention, a "reference local oscillation signal" transmitted by one transmitting station refers to a "local oscillation signal" used in generating and transmitting a radio modulation signal from an intermediate frequency band modulation signal, and generating an intermediate frequency band demodulation

signal from a received radio modulation signal. It is quite different from the timing signal of the document 1.

(2-2) Relating to claims 4 and 8

In the present invention, as clearly described above by restricting the scope of claims 4 and 8, the output signal of the hopping synthesizer used as a local oscillation signal in addition to the frequency hopping radio modulation signal of a single-side band wave or a both-side band wave obtained is amplified by an amplifier without a band pass filter, and is transmitted through an antenna; and

the two signal components of a downconverted local oscillation signal component and modulation signal component are extracted, and a desired second intermediate frequency band modulation signal is regenerated by generating a product component of the two signal components.

With the above-mentioned configuration, as described in the specifications, since there is nothing to be removed by a band pass filter on a transmitting side, no band pass filter is required after a frequency conversion mixer, and a low-cost transmitter configuration can be realized. (If an image rejecting mixer is used, a frequency-converted radio signal of a single-side band wave and an output signal of a hopping synthesizer used as a local oscillation signal can be obtained.)

The present invention is quite different in configuration from the technique of each citation, and has an effect based on the specific

configuration. Thus, we consider that the present invention has an inventive step to be recognized as patentable.